REMARKS

Claims 1, 3-5 and 7-10 are pending in this application. Claim 1 has been amended to emphasize that the reaction of the claimed invention is a catalytic, partial oxidation reaction which is an endothermic, heat consuming reaction. No new mater has been introduced.

Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over Foster (U.S. Pat. Publ. No. 2002/0068025) in view of Nishizawa (U.S. Patent No. 5,094,074). Claims 3-5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Foster in view of Nishizawa and further in view of Mentschel (U.S. Patent No. 4,018,573). Claims 7-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Foster in view of Fujitani (U.S. Patent No. 4,109,461). Claim 10 is rejected under 35 U.S.C. §103(a) as being unpatentable over Foster in view of Nishizawa and further in view of Werges (U.S. Patent No. 3,929,412). These rejections are respectfully traversed.

At the outset, Applicants submit that the rejection of claims 1, 3-5 and 7-10 is premised upon Foster, or upon the Foster and Nishizawa, in combination with additional prior art references. Foster and Nishizawa (alone or in combination) fail to disclose or suggest the subject matter of claims 1, 3-5 and 7-10.

The Examiner asserts that Foster discloses a reactor for oxidizing hydrocarbons produced by combustion engines ([0002] and Fig. 9 of Foster). In Foster, hydrocarbons (non-combusted fuel in exhaust gas) are oxidized, so the remains of hydrocarbons are converted to carbon dioxide and water, which is an exothermic, heat producing reaction. Contrary to the exothermic, heat producing reaction of Foster, the reaction of the claimed invention is a catalytic, partial oxidation reaction, which is endothermic, heat consuming reaction, and which converts hydrocarbons to carbon monoxide and hydrogen (i.e., synthesis gas). This is why it is important that the reactor feed gas does not migrate into the insulation.

Fig. 9 of Foster discloses a reactor where protection ring 92 adjoins the outlet 82. Fig 9 of Foster shows an inlet to the catalyst and an outlet from the catalyst, which are equally tightly connected to the outer shell, and where the mat support 70 is adjacent to the catalyst 10 (see [0045],

[0058]). The mat 70 is within the depressed surface 24 of the catalytic substrate 10 (see [0059]). The mat material is between catalyst substrate and the shell (see [0037]). Paragraph [0042] of Foster describes a catalyst for a reaction different from the one in the reactor of the claimed invention.

In contrast to the reactor of Foster, in the reactor of the present invention, as recited in claim 1, the catalyst is surrounded by a tight shell, basket, connected to the inlet channel, which again is tightly connected to the outer shell at the gas inlet, but not at the gas outlet. Thus, the reactor of Foster is different from the reactor of the claimed invention, particularly by not having a basket between the catalyst and the insulating material/mat.

Nishizawa discloses metal sheets, which are coated with "electrically insulative ceramic layers" (column 1, lines 42-50). However, this teaching cannot motivate a person having ordinary skill in the art to coat a basket with a ceramic layer in the reactor of Foster because the reactor of Foster does not comprise a basket. Further, the reactor of the claimed invention is not concerned with, or related to, electric current. Thus, Foster and Nishizawa, considered alone or in combination, do not disclose or suggest the subject matter of claims 1, 3-5 and 7-10. Mentschel, Fujitani and Werges fail to address the deficiencies of Foster and Nishizawa.

Allowance of all pending claims is solicited.

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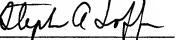
Respectfully submitted,

By 

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